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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/780,270

Filing Date: February 17, 2004

Appellant(s): BENDER ET AL.

Robert C. Kowert
For Appellant

EXAMINER'S ANSWER

*This is in response to the appeal brief filed 10/3/07 appealing from the Office action
mailed 7/18/07.*

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

U.S. Patent No. 7,103,760 B1 to Billington et al. (hereinafter Billington).

U.S. Patent Publication No. 2004/0064461 A1 to Pooni et al. (hereinafter Pooni).

U.S. Patent Publication No. 2003/0056063 A1 to Hochmuth et al. (hereinafter Hochmuth).

U.S. Patent Pub. No. 2005/01023377 A1 to King et al. (used only as evidentiary reference).

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-5, 8-12, and 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,103,760 B1 to Billington et al. (hereinafter Billington) and Patent Pub. No. 2005/0102377 A1 to King et al. (used as an evidentiary reference).

1. *In regard to claim 1 Billington discloses system and method of using thin client(s) devices, which is combined with hardware/software at server and facilitates concurrent use of resources of powerful PC or computer (see column 5, lines 51-67 to column 6, lines 1-2). The King's reference used as an evidentiary reference to show that a thin client is the same as a stateless client (e.g., see paragraph 10 of King's references), thus the thin client disclosed by Billington represents the stateless client recited in the instant application. Referring again to claim 1, Billington teaches:*

"A system (e.g., Fig. 11), comprising:"
"a server configured to execute an application;" (e.g., see column 13, line 19 to column 14, line 16). Billington teaches various uses of thin clients that use resources of

a processor or a server for various applications. The applications are executed at PC or server.

"a stateless client configured to communicate with said server (e.g., see column 13, lines 19-29; Fig. 11), and further configured such that during use, a user interacts with said application via said stateless client;" (e.g., see column 5, lines 51-57; column 14, lines 8-16; Fig. 11). For example Billington teaches various application of system 10 shown in Fig. 11. The system shows that thin client 12 communicates with processor 14 comprising a server via wire/wireless lines. Some examples of the applications using thin client is web radio and TV.

"a mass storage device locally coupled to said stateless client (e.g., column 13, line 47; Storage Drive 80 in Fig. 11), wherein said mass storage device is accessible by said user via said server." (e.g., see column 13, lines 19-31; Fig. 11). Fig 11 shows that mass storage device 80 is locally connected to the thin client 12. The server coupled to the thin client device. The mass storage device is accessible by users via processor 14 that comprises a server.

"wherein said server is further configured to store data to said mass storage device via said stateless client in response to said user's interaction with said application." (e.g., see column 3, lines 41-50; column 11, lines 28-39; column 13, line 67 to column 14, line 7; Fig. 11). Billington does not explicitly spell out to store the data to mass storage 80. However, Billington teaches transferring the video data to the mass storage device. Transferring the video data to the mass storage device comprises storing the video data in the mass storage device. Therefore, it is clear that the users of the thin

clients use the resources connected to the thin clients including the mass storage device 80 via the processor 14 comprising which comprises a server.

2. *In regard to claims 2, 9, and 16 Billington teach:*

“wherein said storage device is locally coupled to said stateless client via a Universal Serial Bus (USB) or IEEE 1394 interface.” (e.g., **see column 10, lines 17-20**).

3. *In regard to claims 3, 10, and 17 Billington teach:*

“wherein said storage device is a mass storage device employing magnetic media.” (e.g., **see column 8, lines 37**). *For example the hard disk comprises is a mass storage device that employing magnetic media.*

4. *In regard to claims 4, 11, and 18 Billington teach:*

“wherein said storage device is a mass storage device employing optical media.” (e.g., **see column 2, line 67**).

5. *In regard to claims 5, 12, and 19 Billington teach:*

“wherein said storage device is a solid- state mass storage device.” (e.g., **see column 12, line 14**). *For example a flash memory module represents a solid- state mass storage device.*

6. *In regard to claim 8 Billington teaches:*

“A method comprising: executing an application on a server;” (e.g., **see column 13, line 19 to column 14, line 16**).

“a user interacting with said application via a stateless client configured to communicate with said server;” (e.g., **see column 5, lines 51-57; column 14, lines 8-16; Fig. 11**).

“and said user accessing a mass storage device via said server (e.g., **see column 13, lines 19-31; Fig. 11**), wherein said mass storage device is locally coupled to said stateless client.” (**e.g., Mass Storage Device 80 in Fig. 11**).

“wherein said server is further configured to store data to said mass storage device via said stateless client in response to said user’s interaction with said application.” (**e.g., see column 3, lines 41-50; column 11, lines 28-39; column 13, line 67 to column 14, line 7; Fig. 11**).

7. *In regard to claim 15 Billington teaches:*

“A computer-accessible medium comprising program instructions, wherein the program instructions are computer-executable by a server to:” (**e.g., see column 2, line 66 to column 3, line 17**). *Billington teaches processor of data or tasks that are executed by the processor or server. To process data and to execute tasks and various applications taught by Billington would comprise program instructions.*

“detect the presence of a mass storage device locally coupled to a stateless client;” (**e.g., see column 9, lines 9-13; column 10, lines 1-20**). *Billington teaches, for example, a software implementation of the “key” enabling detection of compatibility or incompatibility of the devices. The devices include mass storage.*

“and interface said mass storage device (**e.g., element 80 in Fig. 11**) to an application executable on said server;” (**e.g., see column 5, lines 51-57; column 14, lines 8-16; Fig. 11**). *Mass Storage Device 80, connected to Thin Client 12, is accessible by the by the application executable on the Processor or server 14.*

"wherein a user interacts with said application via said stateless client (e.g., see **column 5, lines 51-57; column 14, lines 8-16; Fig. 11**), and wherein said mass storage device is accessible by said user via said server." (e.g., see **column 5, lines 51-57; column 14, lines 8-16; Fig. 11**).

"wherein the program instructions are further executable by the server to store data to said mass storage device via said stateless client in response to said user's interaction with said application." (e.g., see **column 3, lines 41-50; column 11, lines 28-39; column 13, line 67 to column 14, line 7; Fig. 11**).

Claims 6, 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billington in view of U.S. Patent Publication No. 2004/0064461 A1 to Pooni et al. (hereinafter Pooni).

8. *In regard to claims 6, 13, and 20 Billington teaches all limitations included in the base claims but does not expressly teach:* "wherein said server is further configured to provide a kernel execution mode and a user execution mode, and wherein said server is further configured to execute a storage service daemon, wherein said storage service daemon executes in user execution mode."

Pooni teaches: "wherein said server is further configured to provide a kernel execution mode and a user execution mode (e.g., see **paragraph 52 in page 5**), and wherein said server is further configured to execute a storage service daemon (e.g., see **paragraph 52 in page 5**), wherein said storage service daemon executes in user

execution mode." (E.g., see paragraph 39 in page 4) for executing storage service (e.g., SCSI subsystem) daemon in user mode.

Disclosures by Billington and Pooni are analogous because both references related to network storage and computing systems.

At the time of invention it would have been obvious to a person of ordinary skill in art to modify the sever taught by Billington to include the kernel mode and user mode taught by Pooni.

The motivation for executing storage service daemon in user mode as taught by paragraph 33, page 3 of Pooni is a method and arrangement for dynamically detecting one or more SCSI devices on a Linux host, thus improving the method existed in prior art (see background of invention).

Therefore, it would have been obvious to combine disclosures by Pooni with Billington to obtain the invention as specified in the claim.

Claims 7, 14, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billington in view of U.S. Patent Publication No. 2003/0056063 A1 to Hochmuth et al. (hereinafter Hochmuth).

9. *In regard to claims 7, 14, and 21 Billington teaches all limitations included in the base claims but does not expressly teach: "wherein said storage device comprises one or more unit interfaces, wherein each unit interface comprises one or more logical units (LUNs), and wherein each logical unit comprises one or more partitions."*

Hochmuth teaches: "wherein said storage device comprises one or more unit interfaces (e.g., paragraph 30 in pages 4 to 5), wherein each unit interface comprises one or more logical units (LUNs) (e.g., paragraph 30 in pages 4 to 5), and wherein each logical unit comprises one or more partitions." (e.g., paragraph 14 in page 2) for partitioning the logical storage units.

Disclosures by Billington and Hochmuth are analogous because both references related to network storage and computing systems.

At the time of invention it would have been obvious to a person of ordinary skill in art to modify the mass storage device taught by Billington to include the storage device with logical storage units partitioning taught by Hochmuth.

The motivation for logical storage partitioning as taught by paragraph 9, page 1 of Hochmuth is to provide a secure storage access configuration module.

Therefore, it would have been obvious to combine disclosures by Hochmuth with Billington to obtain the invention as specified in the claim.

(10) Response to Argument

In page 10 of the argument, the Appellant States:

"1. Billington fails to disclose that a mass storage device locally coupled to a thin client is accessible via a server."

Billington teaches a computer or a network system 10 (e.g., Fig. 11) comprising a plurality of peripheral devices including the thin client device 12. The thin client 12 is locally connected to a mass storage device 80 and other peripheral devices. The thin

client 12 is also coupled to the processor 14 via a wire or wireless connection. Billington teaches that the processor 40 is acting as server for the system (column 13, lines 19-56 of Billington). Billington further teaches that in one embodiment the system 10 can be a part of home or office network and the system allows a user at client share the resource of the system (column 13, lines 62-63 of Billington). The system 10 can be expanded to include or integrate variety of peripheral devices (e.g., see column 14, lines 8-16). It is understood by one having ordinary skill in the art that to run any of peripheral devices, a specific program (e.g., device driver) is required. The program must be stored in the mass storage device by the processor (e.g., processor 14 in Fig. 11). In system of Fig. 11 the user stores such programs via the processor 14 which used as a server for the system.

In page 11 of the brief the Appellant states:

"2. Billington fails to disclose a server configured to store data to a mass storage device via a thin client in response to a user's interaction with an application executable on the server."

As described above for running a peripheral device a device driver associated to the peripheral device is stored by processor in response with user interaction. As is shown in Fig. 11 since there is no direct connection between the processor 14 and the mass storage device 80, the accessing of the storage device 80 by the processor 14 is only possible via the thin client 12. In addition, Billington teaches that system 10 may be expanded to a home or office network which may incorporate additional peripheral

devices for variety of applications (e.g., see column 14, lines 8-16 and 30-34). In order to run any of the application associated with the peripheral devices disclosed by Billington, the program must be stored in the mass storage and accessed by the processor with interaction with user.

In page 12 the Appellant states:

"3. The omitted claim features are not inherently disclosed by Billington and cannot be inferred from Billington."

In the Advisory action mailed 7/18/07, the Examiner stated that he believes that Billington anticipate all the limitations recited in the claim either directly or inherently. Based on the above discussion and the prior Office Actions of record the Examiner believes that sufficient evidence provided that shows Billington directly and/or inherently teaches all the limitations recited in the independent claim 1. The Appellant appears to agree that thin client is connected to the mass storage device and the mass storage device is accessed by the thin client. However, the Appellant speculates that the mass storage device may be directly accessed by the client device. For example in page 14 of the brief states:

"For example, in the absence of any implementation detail, it is conceivable that Billington's thin client may possess sufficient functionality (such as local device drivers) to interact with mass storage device 80 without the involvement of processor 14. However, a thin client that writes data directly to a mass storage device without the involvement of a server (and by extension, without the data storage occurring in response to a user's interaction with an application the server is configured to execute) contradicts the recitations of claim 1, which requires that the mass storage device

coupled to the thin client be accessible by a user via the server and that the server be configured to store data to the mass storage device in response to the user's interaction with the recited application. Because features that cannot occur together with the features of claim 1 are compatible with Billington's disclosure, it follows that the features of claim 1 are not inherently disclosed by Billington and cannot be inferred from Billington."

However, the above statement by the Appellant, that Billington's thin client may possess sufficient functionality (such as local device drivers) to interact with mass storage device 80 without the involvement of processor 14, is contrary to teaching of Billington which states:

"In an office environment, the system enables numerous thin clients to share the resources of one powerful PC, which acts as a server, or comprises a purpose built server, and share use of drives, one or more printers, scanners, etc." (Column 14, lines 12-16; *emphasis added*).

In page 14 the Appellant states:

"4. The standard of anticipation has not been met with respect to the independent claims."

In Page 15 the Appellant further states:

"As demonstrated above, Billington fails to explicitly disclose various features of claim 1. Appellants have further demonstrated that the features of claim 1 that are omitted from Billington do not follow inherently from Billington. Similar arguments apply to independent claims 8 and 15, which recite features similar to claim 1. Thus, Billington fails to meet the above standard with respect to independent claims 1, 8, and 15, and therefore cannot be said to anticipate the independent claims. Appellants further note that the remaining cited references do not remedy the omissions of Billington with respect to the independent claims."

Features or limitations recited in claim 1 and similarly in independent claims 8 and 15 is taught by Billinton.

Rejection of claims 5, 12, and 19:

In page 15 of the brief The Appellant states:

"In rejecting claim 5, the Examiner asserts that Billington, col. 12 line 14 discloses the recited features. Final Action, p. 4. However, the cited portion of Billington has nothing to do with the embodiment of Billington in which a thin client device is discussed. The extent to which Billington describes any aspect of a thin client device can be found at col. 13, line 19 - col. 15, line 35. Nowhere in this section does Billington describe that a solid-state mass storage device may be locally coupled to a thin client. Therefore, Appellants submit that the rejection of claim 5 and similar claims 12 and 19 is unsupported by Billington."

Billington teaches:

"As will be appreciated, in one embodiment more than one cradle can be provided. For example it may be desirable to have a PDA syncing cradle, a mobile phone or other wireless connection device cradle, which can provide a wireless connection to a network, a digital image capture device cradle for video or still cameras, or a flash memory module cradle, to name a few examples. This would be an alternative or supplement to the concept of using a standard cradle and adapter as discussed above." (Column 12, lines 9-17; Emphasis added).

The PDA and/or mobile phone are considered thin client data communication devices (e.g., see column 8, line 47).

Rejection of claims 6, 13, and 20:

In regard to rejection of claims 6, 13, and 20 under 35 U.S.C. § 103(a) the Appellant on page 16 of the brief argues that there is no motivation for combining the Billington with Pooni (U.S. Patent Publication No. 2004/0064461 A1). However, as was shown in rejection of the claims in the final Office Action the two references are

analogous and the Examiner has provided motivation (from Pooni's reference) for combining the two references.

Rejection of claims 7, 14, and 21:

Claims 7, 14 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Billington in view of Hochmuth et al. (U.S. Publication No. 2003/0056063) (hereinafter, "Hochmuth").

The Appellant in page 17 of the remarks in regard to rejection of claims 7, 14 and 21 states:

"However, the cited portion of Hochmuth does not describe any aspect of a unit interface of a mass storage device. Rather, this portion of Hochmuth is describing a user interface that is implemented by Hochmuth's configuration server 54. A user interface provided by a server simply has nothing to do with a unit interface of a mass storage device."

The storage array or storage device taught by Hochmuth comprises a plurality of logical units. Hochmuth teaches logic 59 provides one or more interfaces to these logical units. Logical units or LUNs are parts or partitions of the storage device. Therefore, Hochmuth teaches the limitation as recited in the claims.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Hashem Farrokh 
Donald Sparks 

Conferees:

Donald Sparks

DONALD SPARKS
SUPERVISORY PATENT EXAMINER



Manorama Padmanabhan